No. 867,743. PATENTED OCT. 8, 1907.

H. D. MURDOCK

PLUG-IN SWITCH.

APPLICATION FILED MAR. 21, 1907.

Fig. 1.

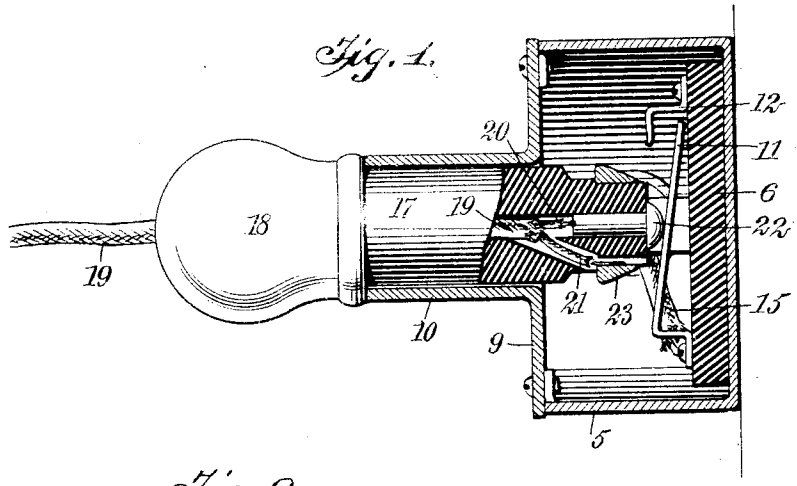


Fig. 2.

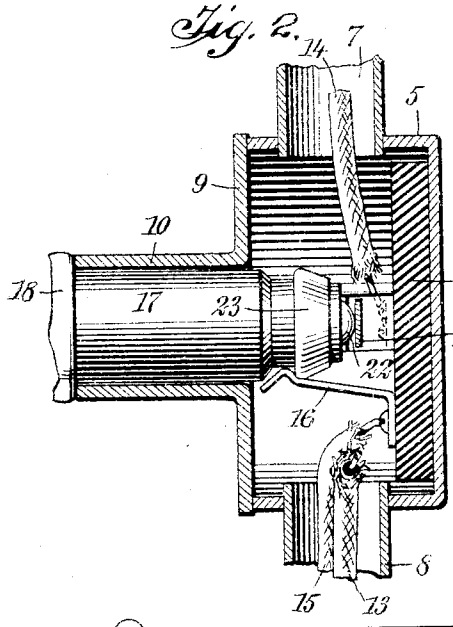


Fig. 3.

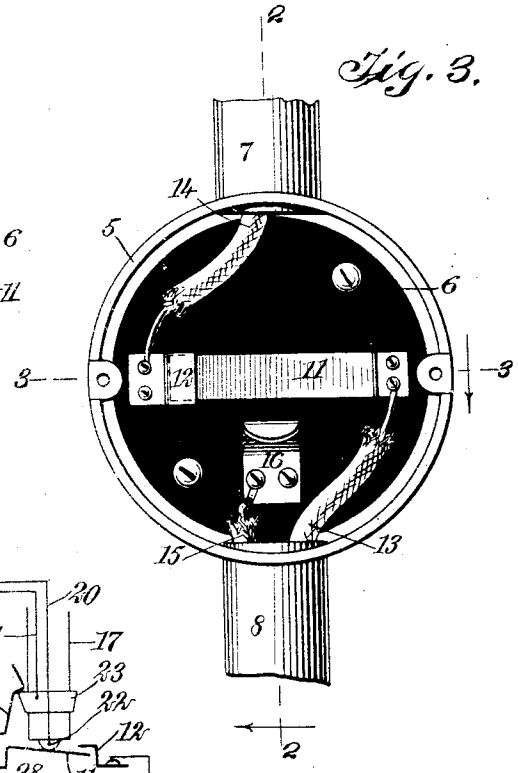
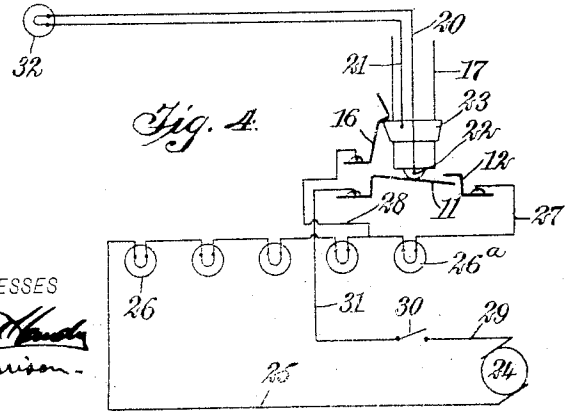


Fig. 4.



WITNESSES

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PLUG-IN SWITCH.

No. 867,743. Specification of Letters Patent. Patented Oct. 8, 1907.

Application filed March 21, 1907. Serial No. 363,645.

To all whom it may concern:

Be it known that I, HENRY DELOS MURDOCK, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Plug-In Switch, of which the following is a full, clear, and exact description.

My invention relates to electric switches of the so-called "plug-in" type, my more particular object being to provide a construction containing an electric circuit divided in parallel into two branches, which are respectively connected with electric lamps, the arrangement being such that by inserting a plug, one of the branch circuits is opened and the other closed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly in section, showing my improved plug-in switch, the normally closed contact being opened because of the insertion of the plug; Fig. 2 is a substantially central section through the device, taken at a right angle to the view in Fig. 1, on the line 2—2 of Fig. 3, and showing the normally opened contact as closed by the insertion of the plug, this view further showing the manner in which the wires of the lighting circuit are led into the box; Fig. 3 is a front elevation showing the box with its lid removed, and further showing the manner of connecting up the contact members and wires; and Fig. 4 is a diagram representing the wiring of a circuit employed in connection with my plug-in switch, and showing the normally open contact as closed and the normally closed contact as open because of the insertion of the plug.

A box 5, which may be arranged to some extent like a wall box, is fitted internally with a disk 6, of insulating material, secured to the bottom of the box. Tubes 7, 8 are tapped into the box for the purpose of facilitating the leading of wires thereinto. A lid 9 is provided for the box and has a neck 10. A contact spring 11 is disposed adjacent to a contact hook 12, these parts being so arranged that the tension of the contact spring 11 normally holds it against the hook 12, the two parts thus constituting a normally closed contact. A wire 13 leads to the contact spring 11, another wire 14 being connected with the contact hook 12. A wire 15 is connected with a contact spring 16. A plug 17 is provided with a rounded head 18 and is made of substantially cylindrical form, so as to admit a cable 19. This cable contains separate wires 20 and 21 leading respectively to the tip 22 and sleeve 23 serving as contact members. When the plug is inserted in the box, as indicated in Figs. 1 and 2, the sleeve 23 causes the contact spring 16 to move slightly outward and then snap inward so as to secure a good engagement between the spring 16 and the sleeve 23. In doing this, the tip 22 depresses the contact spring 11, so as to disconnect this spring from the stationary hook 12 and thus open the normally closed contact. The net result is that when the plug is inserted, one contact is opened, while at the same instant another, previously open, is closed.

At 24 is shown a dynamo representing any source of electricity. A wire 25 leads therefrom to a series of electric lamps 26 one of which, 26^a, is connected a little differently from the others. From the lamp 26^a a wire 27 leads to the contact hook 12. A wire 28 is connected with the contact spring 16 and is in series with four of the lamps 26, with reference to the dynamo 24. That is to say, a connection of the wire 28 is made between the four lamps 26 and the single lamp 26^a. From the dynamo 24 a wire 29 leads to a hand-switch 30, and the latter is connected by a wire 31 with the contact spring 11.

At 32 is shown a lamp which is in series with wires 20, 21. Before the plug 17 is inserted, the circuit is as follows: Source of electricity 24, wire 25, all of the lamps 26, 26^a, wire 27, contact members 12, 11, wire 31, hand-switch 30 and wire 29, back to source. When, however, the plug is inserted, as indicated in Fig. 4, the branch circuit through lamp 26^a, wire 27 and contact members 12, 11, is broken, and the circuit is completed as follows: Source of electricity 24, wire 25, four lamps 26, wire 28, contact spring 16, sleeve 23, wire 21, lamp 32, wire 20, tip 22, contact spring 11, wire 31, hand-switch 30, and wire 29, back to source. The net result is that by the insertion of the plug, the lamp 26^a is extinguished, whereas the lamp 32 is lighted, all of the other lamps 26 of the system remaining lighted as before. Looking toward the accomplishment of this purpose, the insertion of the plug opens a normally closed contact and closes a normally opened contact.

I prefer to make the plug and box pretty large, and, in fact, to build the entire device upon a large scale, so as to enable it to be used in connection with lamps operated by heavy currents. I do not limit myself, however, to any particular sizes or proportions for any of the parts, nor to any precise use to which the device may be applied.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of a box, a disk of insulating material mounted therein, a stationary contact hook mounted upon said disk, a contact spring mounted upon said disk and normally engaging said contact hook, a plug provided with a contact member for engaging said contact spring and forcing the latter out of engagement with said hook, said plug being encircled by another contact member, and another contact spring mounted upon said disk and adapted to engage said contact member encircling said plug.

2. The combination of a box provided with a lid having a neck, a member of insulating material mounted within said box, a contact hook mounted upon said member of insulating material, a contact spring mounted upon said member of insulating material and normally engaging said hook, a plug adapted to fit into said neck, a contact member mounted upon said plug and adapted to engage said contact spring so as to force the same into engagement with said contact hook, a contact member mounted upon said plug and encircling the same, and a spring contact mounted upon said member of insulating material within said box, and adapted to engage said contact sleeve upon said plug.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY DELOS MURDOCK.

Witnesses:
D. L. THOMPSON,
JACOB SCHAEFER, Jr.